

**Notice of Allowability**

Application No.

10/693,455

Applicant(s)

INUI ET AL.

Examiner

Nelson D. Hernandez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/8/2007.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

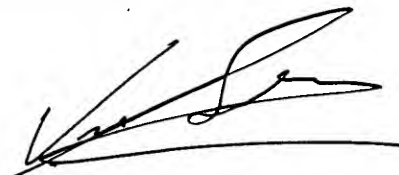
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_



VIVEK SRIVASTAVA  
SUPERVISORY PATENT EXAMINER

## **DETAILED ACTION**

### ***Response to Amendment***

1. The Examiner acknowledges the amended claims filed on May 8, 2007. Claim 10 has been amended. Claims 11 and 12 have been newly added.

### ***Response to Arguments***

2. Applicant's arguments, see pages 10-12, filed May 8, 2007, with respect to claims 1, 9 and 10 have been fully considered and are persuasive. The rejection of claims 1, 9 and 10 has been withdrawn.

## **EXAMINER'S AMENDMENT**

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mark A. Williamson on May 10, 2007.

The application has been amended as follows:

**Claim 11. (Currently Amended)** A solid-state image sensor comprising:  
a sensor array including an array of pixel photosensor cells;

a plurality of optical-signal common output lines and noise-signal common output lines, including a first optical-signal common output line, a second optical-signal common output line, a first noise-signal common output line, and a second noise-signal common output line; and

a plurality of differential output means, each outputting differential signals between signals which derive from the optical-signals and the noise-signals output from the corresponding pixel photosensor cells, and including first and second differential output means,

wherein said signal common lines are arranged parallel to each other in the sequence of: the first optical-signal common output line, the first noise-signal common output line, the second noise-signal common output line, and the second optical-signal common output line ~~are arranged parallel to each other in this sequence,~~

the first optical-signal common output line and the first noise-signal common output line are connected to the first differential output means, and

the second optical-signal common output line and the second noise-signal common output line are connected to the second differential output means.

**Claim 12. (Currently amended)** A signal output device comprising:

a first signal source and a second signal source, each outputting a first signal and a second signal;

a first signal line to which a first signal deriving from said first signal source is output; a second signal line to which a second signal deriving from said first signal source is output;

a third signal line to which a second signal deriving from said second signal source is output;

a fourth signal line to which a first signal deriving from said second signal source is output;

first differential output means to which said first signal line and said second signal line are connected, and which outputs a differential signal between the first signal and the second signal deriving from said first signal source; and

second differential output means to which said third signal line and said fourth signal line are connected, and which outputs a differential signal between the first signal and the second signal deriving from said second signal source,

wherein said signal lines are arranged in parallel in the sequence of: said first signal line, said second signal line, said third signal line, and said fourth signal line ~~are arranged in this sequence,~~ and

the signal levels of the second signals are lower than that of the first signals.

***Allowable Subject Matter***

4. **Claims 1-12 are allowed.**

5. The following is an examiner's statement of reasons for allowance:

**Regarding claim 1**, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest, including all the elements of the present claim, that the  $n$  optical-signal common output lines and the  $n$  noise-signal common output lines are arranged parallel to each other, and, of the  $n$  optical-signal common output lines and the  $n$  noise-signal common output lines, a first optical-signal common output line, a first noise-signal common output line, a second optical-signal common output line, and a second noise-signal common output line are arranged in the sequence of the first optical-signal common output line, the first noise-signal common output line, the second noise-signal common output line, and the second optical-signal common output line, and wherein the first optical-signal common output line and the first noise-signal common output line are connected to the first differential output means, and the second optical-signal common output line and the second noise-signal common output line are connected to the second differential output means.

**Regarding claim 9**, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest, including all the elements of the present claim, that the  $n$  first-signal common output lines and the  $n$  second-signal common output lines are arranged parallel to each other, and, of the  $n$  first-signal common output lines and the  $n$  second-signal common output lines, at least four common output lines consisting of a first first-signal common output line, a first second-

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signal common output line, a second first-signal common output line, and a second second-signal common output line are arranged in the sequence: the first first-signal common output line, the first second-signal common output line, the second second-signal common output line, and the second first-signal common output line, and wherein the first first-signal common output line and the first second-signal common output line are connected to the first differential output means, and the second first-signal common output line and the second second-signal common output line are connected to the second differential output means.

**Regarding claim 10**, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest, including all the elements of the present claim, that the  $n$  first-signal common output lines and the  $n$  second-signal common output lines are arranged parallel to each other, and, of the  $n$  first-signal common output lines and the  $n$  second-signal common output lines, at least four common output lines consisting of a first first-signal common output lines, a first second-signal common output line, a second first-signal common output line, and a second second-signal common output line are arranged in the sequence: the first first-signal common output line, the first second-signal common output line, the second second-signal common output line, and the second first-signal common output line, and wherein the first first-signal common output line and the first second-signal common output line are connected to the first differential output means, and the second first-signal common output line and the second second-signal common output line are connected to the second differential output means.

**Regarding claim 11**, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest, including all the elements of the present claim,

**Regarding claim 12**, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest, including all the elements of the present claim, that the signal lines are arranged in parallel in the sequence of: said first signal line, said second signal line, said third signal line, and said fourth signal line, and the signal levels of the second signals are lower than that of the first signals.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **Contact**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernandez whose telephone number is (571) 272-7311. The examiner can normally be reached on 8:30 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nelson D. Hernandez  
Examiner  
Art Unit 2622

NDHH  
May 11, 2007



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